APPENDIX A

STATEMENT OF WORK

"ANALYSIS & TECHNICAL ASSISTANCE"

JANUARY 22, 2004

Background

Our nation is facing increasing public concerns over adequate, affordable, and reliable energy supplies, as well as the environmental impacts of energy production, distribution and end-use. In addition, with increasing emphasis on our nation's economic competitiveness and energy security, demands on the energy system are changing substantially. As we move into the twenty-first century the energy-related challenges facing the Nation provide significant new challenges and opportunities for clean energy technologies and practices.

The Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) leads the Federal government's research, development, and deployment (RD&D) efforts to provide reliable, affordable, and environmentally sound energy for America's future.

EERE's RD&D efforts are principally organized around 11 programs in the Office of Technology Development. EERE's corporate analysis activities and business operations are managed within the Office of Business Administration.

The National Renewable Energy Laboratory (NREL) has a major responsibility for implementation of EERE's RD&D programs. The laboratory's mission is to develop renewable energy and energy efficiency technologies and practices, advance related science and engineering, and transfer knowledge and innovations to address the nation's energy and environmental goals. NREL meets this RD&D mission objective in four fundamental ways: first, by increasing the efficiency of devices, processes, and systems that consume energy; second, by increasing the supply of clean energy, especially renewable energy sources; third, by leading the development of hydrogen technologies and systems to enable transition to substantial use of hydrogen as a clean energy carrier; and finally, by working with stakeholders to formulate energy strategies and standards. This allows the Nation to use less energy overall and to make greater use of cleaner domestic energy resources and systems.

Purpose

In its ongoing program implementation and technical management efforts, NREL requires comprehensive and credible information on the current and potential role of its technologies and practices in the rapidly changing domestic and global marketplace. To provide a portion of this important information, NREL conducts a broad range of technical, economic, financial and organizational studies and analyses. In order draw upon expertise beyond its own capabilities to conduct such work, NREL seeks to establish subcontract agreements with research and analysis organizations that have demonstrated the capability to carry out such studies.

Scope

The subcontractor will conduct specific analysis and/or technical assistance tasks for NREL to meet the ongoing needs of NREL's programs. Work to be performed will consist of specific tasks that shall be defined by NREL on an as-needed basis. Most of the task assignments will have a period of performance ranging from a few months up to one year. A few tasks may be of a quick-response nature. NREL anticipates that the activity level will be between two and four tasks during a given year with the total number of assignments over

a three-year (36 month) period expected to be approximately 6 to 12.

When NREL determines there is a need for specific analysis or technical assistance tasks, under the terms of this procurement, NREL will develop a detailed statement of work that will define the objective of the specific study or analysis required, identify the required elements of the analysis and desired outcome, specify the principal task deliverables, and define the period of performance and milestones.

Work Areas

While specific task assignments have not yet been determined, there are general categories that encompass the type and characteristic of analysis or technical assistance likely to be required. The following list provides representative examples of the studies and analyses of potential interest:

Area 1. Technology and Applications Analysis
Technology Characterizations
Clean Energy Systems Market Projections
Clean Energy Supply and Cost Curves
Resource Assessments
Life Cycle Assessments
Clean Energy Systems Analysis (e.g., production and delivery)

Area 2. Market Analysis
Market Sector Analysis
Development of Sustainable Energy Scenarios
Analysis of Markets for Specific Clean Energy Technologies
Green Power Market Analysis
Distributed Energy Resource Market Issues
Hydrogen Economy Issues
Consumer Analysis
Cross Sector Energy Modeling in Domestic and International Contexts

Area 3. Policy and Benefits Analysis
Developing New Approaches to Valuing EERE Technologies
Externalities Analysis
Representation of Clean Energy Technologies in Energy Models
Climate Change Analysis
Environmental Policy Analysis

Area 4. Program Analysis and Evaluation
Program Benefits Analysis
Developing and Bench-marking New Program Metrics
Technology Roadmapping
Analysis to Support Budget Planning and Defense
Analysis to Support Strategic Planning
Risk Analysis
Portfolio Analysis

TOA Deliverables

For each specific task request, subcontractors will propose a complete set of preliminary, intermediate and final deliverables. These deliverables will be sequenced over the performance period of the task assignment. Typical deliverables will include, but not be limited to, the following:

a) Technical reports, both letter type and formal bound reports

b) Topical Issue briefs (a 10-to15 page, highly readable paper that will be jointly published with NREL) providing information about a current topical issue to Federal, state and industry decision-makers.

c) In-person presentations to NREL and possibly to other audiences

d) Documentation of and software for analysis tools and models/algorithms—particularly internet enabled, and outputs.

e) Journal and/or Conference Papers

f) Workshop Proceedings

The specific deliverables, appropriate peer review of the work products, an outreach plan including an internal, and where appropriate, an external distribution list will be developed in conjunction with the scope of work for each particular task.

Electronic Reporting Requirements for Subcontract Report Deliverables:

As set forth in Department of Energy Order 241.1A, NREL is required to submit in an electronic format all scientific and technical information, including subcontract report deliverables intended for public distribution, to the DOE Office of Scientific and Technical Information (OSTI). In addition, it is NREL's intention to post subcontract report deliverables containing publicly available information (e.g. non-confidential, non-protected, non-proprietary information) for distribution on the NREL Intranet or the Internet.

The Subcontractor shall provide the final approved version of report deliverables intended for public distribution as specified in the deliverables schedule of this Statement of Work in accordance with the following electronic reporting requirements:

a. The Subcontractor shall submit all report deliverables intended for public distribution (including status, annual, or final reports) as electronic files, preferably with all graphics and images embedded within the document. The electronic files shall be submitted along with an accompanying hard (printed) copy(ies) of the report. Limited exceptions allowing some graphics and images to be submitted as hard copies only may be granted on a case-by-case basis. The exceptions process for graphics and images is described in Paragraph E below. It shall be made clear in the deliverable transmittal letter that certain graphics and images are supplied in hard copy only.

b. All final approved version submissions shall be delivered to NREL on PC or MAC-formatted media (3.5 inch disks, Zip and Jaz cartridges, or CD-ROM). Files of 1 Mb or less can be sent via e-

mail to the 1) NREL technical monitor, 2) the NREL Subcontract Administrator or Associate (as specified in the Statement of Work).

c. The preferred format is a single electronic file that includes all of the text, figures, illustrations, and high-resolution digital photographs (or photographs should be scanned and incorporated in the text). Acceptable file formats are:

- Microsoft Word (v.6.0 or newer for PC or MAC)
- WordPerfect (v.6.1 or newer for PC)
- Microsoft PowerPoint
- Microsoft Excel

d. If it is not possible to include all of the graphics and images (figures, illustrations, and photographs) in the same file as the text, NREL will accept the text in one of the above formats and the graphics and images as separate electronic graphic or image files*. The native files for any page layout formats submitted shall be supplied. The following software is supported on both Mac and PC platforms:

- QuarkXPress (.qxd)
- Photoshop (.psd)
- Freehand (.fh)
- Framemaker (.fm)
- Pagemaker (.pm)
- Illustrator (.ai)
- Corel Draw (.cdr)
- Microsoft Publisher(.pub)

*The acceptable graphic or image file formats are: .eps, .tif, .gif, .jpg, .wpg, .wmf, .pct, .png, .bmp, .psd, .ai, .fh, .cdr. The preferred resolution for graphics or images is 150 to 300 dpi. Include all fonts that were used in creating the file.

e. In the rare case that the graphics or images cannot be supplied electronically, either incorporated within the text or as a separate electronic file, original hard copies will be accepted. The Subcontractor shall obtain prior approval from the Subcontract Administrator before submitting graphics or images in hard copies. It shall be made clear in the deliverable transmittal letter that certain graphics and images are supplied in hard copy only.

f. For all calculations in support of subcontract reports that are conducted in ASPEN+, an electronic copy of INPUT, REPORT and BACKUP (if Model Manager is used) must be submitted with all reports. Additionally, if costing or sizing calculations are conducted in a spreadsheet [no process calculations (heat and material balances) in spreadsheet format are permitted], a copy of the fully documented MS Excel file shall be supplied. Note that vendor quotes and other non-original material can be supplied in hard copy.

g. A fully executed release shall be supplied to NREL with all photographs, regardless of whether such photographs are delivered to NREL electronically or in hard copy. Such release shall certify that the National Renewable Energy Laboratory and the United States Government is granted a non-exclusive, paid-up, irrevocable, worldwide license to publish such photographs in any medium or reproduce such photographs or allow others to do so for United States Government purposes.

h. The Subcontractor may contact NREL Publication Services at (303) 275-3644 with questions regarding technical guidance concerning the submission of subcontract report deliverables as electronic files or exceptions to electronic files for graphics and images.

Deliverable Addresses - The Subcontractor shall clearly label all deliverables with the subcontractor name, NREL subcontract number, NREL Technical Monitor name, date, and the deliverable description (e.g., First Monthly Report, Draft Final Report). Deliverables shall be sent to the following addresses:

National Renewable Energy Laboratory
Attn: NREL Technical Monitor, MS ****
1617 Cole Blvd.
Golden, CO 80401
****Email Address

- One (1) master electronic version
- One (1) master printed copy, including graphics, and one copy

National Renewable Energy Laboratory
Attn: Mercedes Amador, MS 2713
1617 Cole Blvd.
Golden, CO 80401
mercedes_amador@nrel.gov

- One (1) master electronic version;
- One (1) printed copy, including graphics

NREL Publication Services, MS 1713
National Renewable Energy Laboratory
1617 Cole Blvd.
Golden, CO 80401
judy_hulstrom@nrel.gov

- One (1) master electronic version;
- One (1) master printed copy, including graphics

Attachment 1

Sample Task Proposal

In accordance with paragraph 9.b. of the RFP, offerors shall prepare and submit a proposal for the sample task described below. The proposals should include

Background discussion
Technical approach, including data requirements and sources, and tools to be developed or used
Discussion of the advantages and limitations of the approach
Description and discussion of the task deliverables
Discussion of potential uses and value of study results
Task schedule
Task budget, including personnel assignments with their levels of effort and their costs

The total sample task proposal length should be no more than 15 pages.

Sample Task Description

The purpose of this task is to develop a better systematic understanding of the environmental and energy security benefits of several key EERE energy technologies. The technologies to be included are Solar, Wind, Hydropower, Geothermal, Biomass, and Hydrogen. The study task is to include these subtasks:

Subtask 1. Develop and provide a report on alternative approaches to defining and estimating environmental and energy security benefits for these technologies, issues to be included and parameters to used, and list the pros and cons of those alternative approaches. Provide a recommended approach with a rationale for its selection.

Subtask 2. Develop a framework for systematically cataloging the environmental and energy security benefits of these technologies. Include specific information on what data and information are to be included in the framework, and how they will be collected or developed.

Subtask 3. Develop and present a recommendation to NREL regarding how this framework might be used in the next year to develop credible and consistent information on environmental and energy security benefits of these technologies, including the best parties to take part in that work.